ATTACHMENT 6

Case No. 3:20-cv-06754-WHA
Related to Case No. 3:21-cv-07559-WHA

Sonos v. Google

Dr. Kevin Almeroth

What I Was Asked To Analyze

- Infringement
- Damages-Related Technical Issues
- Validity

Validity – Assignment

Asserted Claims	Prior Art	Valid?
’885 Patent Claim 1	 Sonos 2005 System + Secondary Prior Art	?
’966 Patent Claims 1, 2, 4, 6, 8	 Sonos 2005 System + Secondary Prior Art	?

Presumption Of Validity And High Burden Of Proof

- A patent is **presumed valid**
- Google must prove invalidity by ***clear and convincing*** **evidence**

Legal Standard for Obviousness

Would the claims as a whole have been obvious to a person of skill at the time of invention?

(1) scope and content of prior art

(2) level of ordinary skill in the art at the time of invention

(3) differences between claimed invention and teachings of prior art

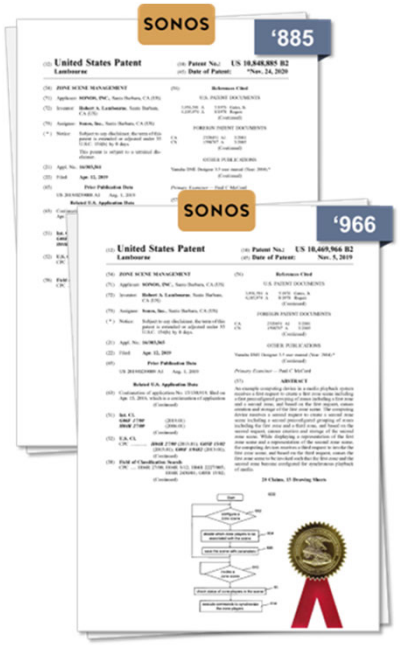
(4) objective evidence of non-obviousness

Safeguards Against Hindsight Bias

- Must have a motivation to combine to achieve the claimed invention
- Must have a reasonable expectation of success
- Must consider secondary considerations

Validity – Methodology

Step 1	**Consider** the claims and their meaning, including the Court's claim constructions
Step 2	**Compare** construed patent claims to Google's prior art combinations to determine if they render claims obvious



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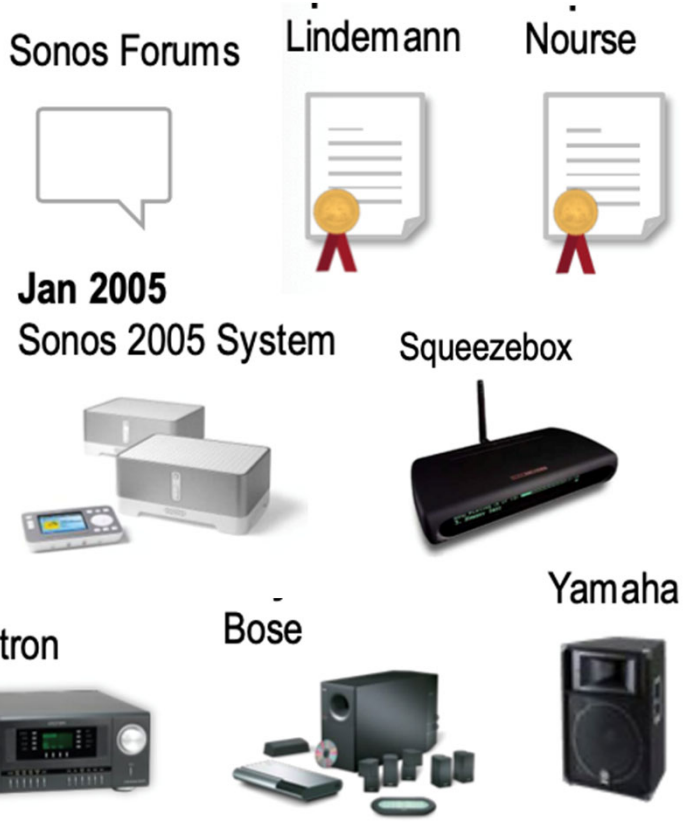
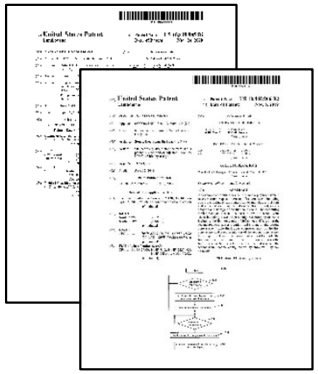


Validity – Materials Considered



Sonos Patent Documents

- ’885 and ’966 Patents
- File Histories
- Claim Construction

Prior Art Documentation

- Public disclosures
- Sonos Internal documents
- Sonos Source Code
- Squeezebox Server Code
- Physical Devices

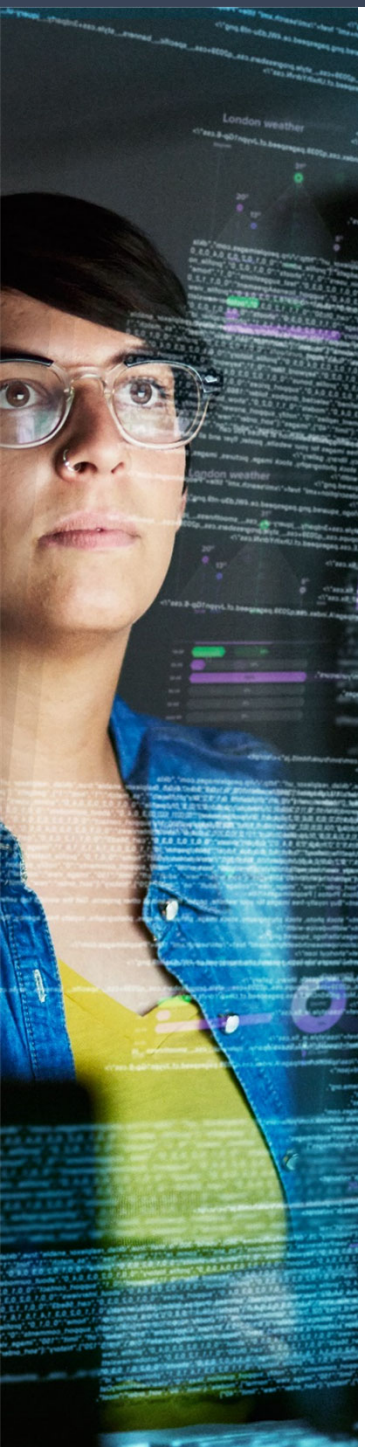
Testimony and Statements

- Dr. Dan Schonfeld
- Robert Lambourne
- Nick Millington

Agreed Claim Constructions

Claim Term	Sonos Patents	Agreed Construction
"zone scene"	'885 Patent '966 Patent	**"a previously-saved grouping of zone players according to a common theme"**
"indication that the first zone player has been added to a … zone scene"	'885 Patent	**"indication from the network device that the zone player has been added by the user to a zone scene"**

Person of Ordinary Skill in the Art



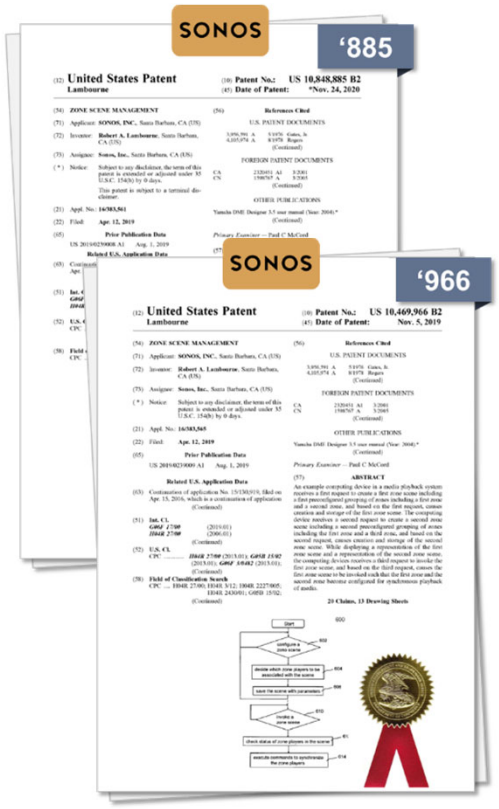
A person having the equivalent of a 4-year degree from an accredited institution (typically denoted as a B.S. degree) in computer science, computer engineering, electrical engineering, or an equivalent thereof, and approximately 2-4 years of professional experience in the fields of networking and network-based systems or applications, such as consumer audio systems, or an equivalent level of skill, knowledge, and experience.

Validity – Conclusion

Asserted Claims	Prior Art	Valid?
’885 Patent Claim 1	 Sonos 2005 System + Secondary Prior Art	✓
’966 Patent Claims 1, 2, 4, 6, 8	 Sonos 2005 System + Secondary Prior Art	✓

The ’885 and ’966 Patents

Sonos's "Zone Scene" Patents



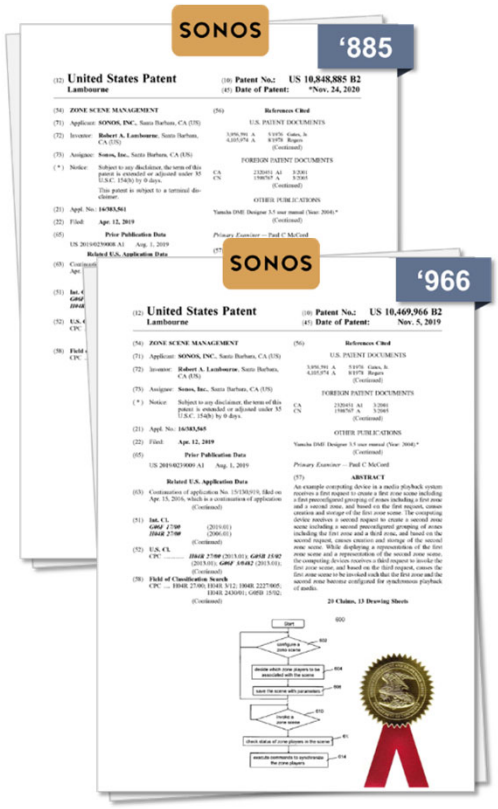
According to one aspect of the present invention, a mechanism is provided to allow a user to group some of the players according to a theme or scene, where each of the players is located in a zone. When the scene is activated, the players in the scene react in a synchronized manner.

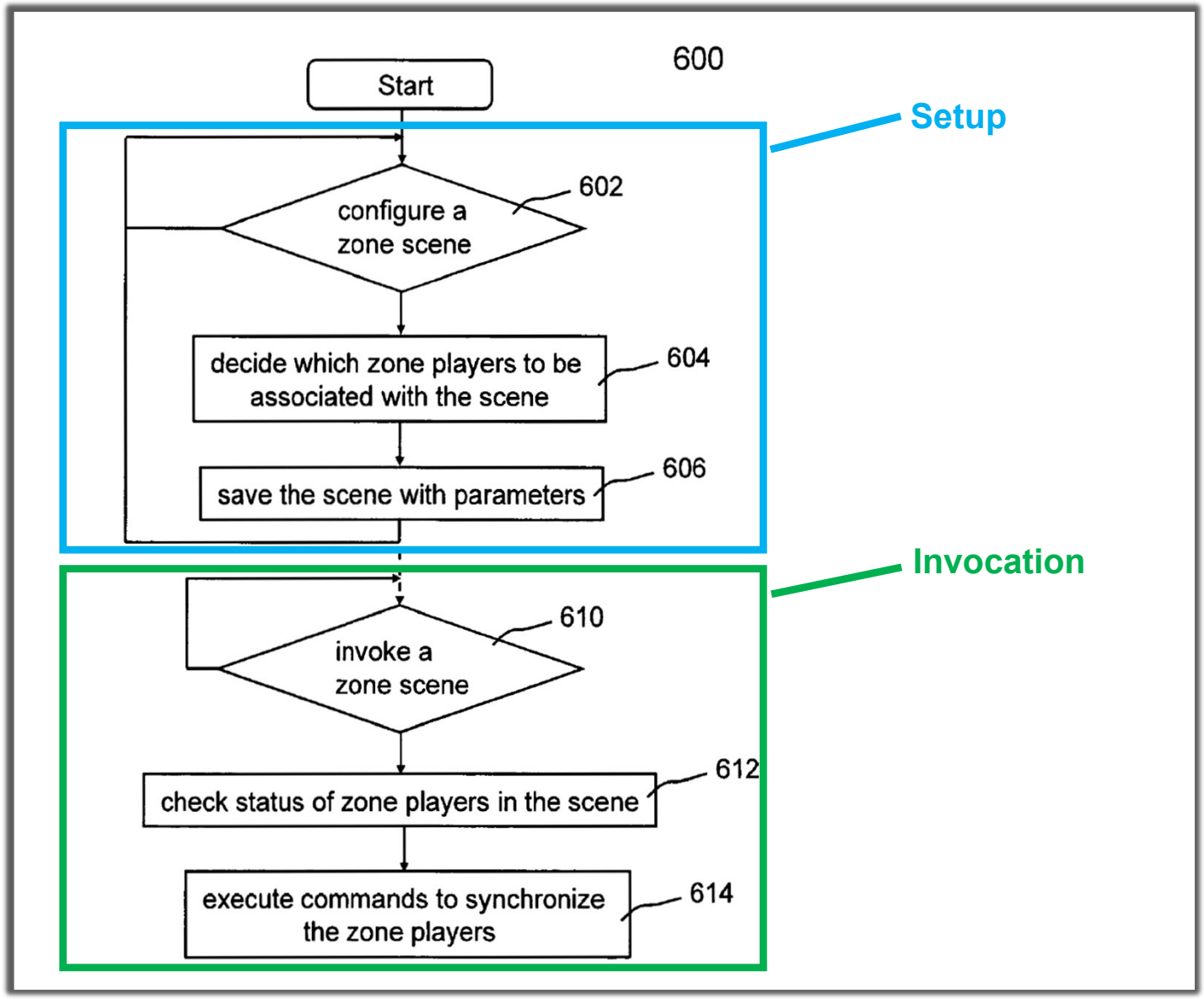
* * * *

According to still another aspect of the present invention, a controlling device (also referred to herein as controller) is provided to facilitate a user to select any of the players in the system to form respective groups each of which is set up per a scene. Although various scenes may be saved in any of the members in a group, commands are preferably sent from the controller to the rest of the members when one of the scenes is executed.

'966 Patent at 2:36-42, 2:52-59

Sonos's "Zone Scene" Patents





'885 Patent at Fig. 6

UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA
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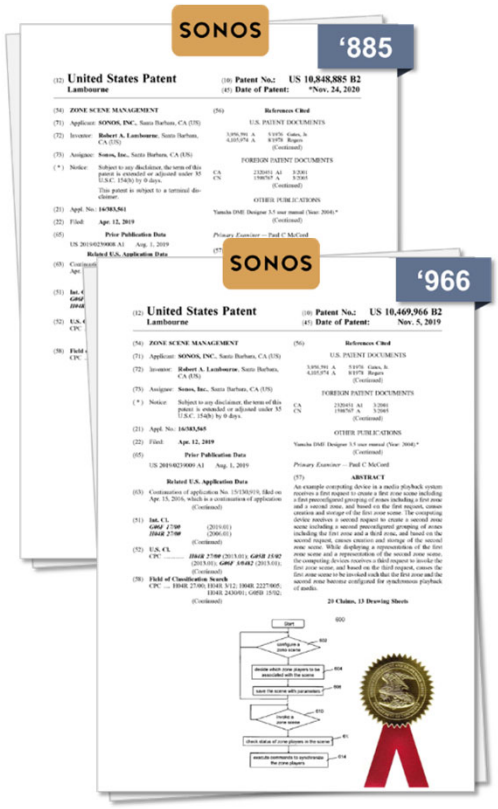
Sonos's "Zone Scene" Patents



1. Multiple zone scenes
   - User-created
   - Common theme
   - Previously saved
   - Overlapping
2. Separation of group creation from group invocation
3. Standalone mode while groups exist
4. Display of multiple zone scenes

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TX0001
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Google's Prior Art Combinations

Validity – Assignment

Asserted Claims	Prior Art	Valid?
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Agreed Claim Constructions

Claim Term	Sonos Patents	Agreed Construction
"zone scene"	'885 Patent '966 Patent	**"a previously-saved grouping of zone players according to a common theme"**
"indication that the first zone player has been added to a … zone scene"	'885 Patent	**"indication from the network device that the zone player has been added by the user to a zone scene"**

'885 Patent, Claim 1 vs. ALL Google Combinations

[1.0] A first zone player comprising:

[1.1] a network interface that is configured to communicatively couple the first zone player to at least one data network;

[1.2] one or more processors;

[1.3] a non-transitory computer-readable medium; and

[1.4] program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the first zone player to perform functions comprising:

[1.5] while operating in a standalone mode in which the first zone player is configured to play back media individually in a networked media playback system comprising the first zone player and at least two other zone players:

[1.6] (i) receiving, from a network device over a data network, a first indication that the first zone player has been added to a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked; and

[1.7] (ii) receiving, from the network device over the data network, a second indication that the first zone player has been added to a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the second zone player is different than the third zone player;

[1.8] after receiving the first and second indications, continuing to operate in the standalone mode until a given one of the first and second zone scenes has been selected for invocation;

[1.9] after the given one of the first and second zone scenes has been selected for invocation, receiving, from the network device over the data network, an instruction to operate in accordance with a given one of the first and second zone scenes respectively comprising a given one of the first and second predefined groupings of zone players; and

[1.10] based on the instruction, transitioning from operating in the standalone mode to operating in accordance with the given one of the first and second predefined groupings of zone players such that the first zone player is configured to coordinate with at least one other zone player in the given one of the first and second predefined groupings of zone players over a data network in order to output media in synchrony with output of media by the at least one other zone player in the given one of the first and second predefined groupings of zone players.

'966 Patent, Claim 1 vs. ALL Google Combinations

[1.0] A computing device comprising:

[1.1] one or more processors;

[1.2] a non-transitory computer-readable medium; and

[1.3] program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the computing device to perform functions comprising:

[1.4] while serving as a controller for a networked media playback system comprising a first zone player and at least two other zone players, wherein the first zone player is operating in a standalone mode in which the first zone player is configured to play back media individually:

[1.5] receiving a first request to create a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked;

[1.6] based on the first request, i) causing creation of the first zone scene, ii) causing an indication of the first zone scene to be transmitted to the first zone player, and iii) causing storage of the first zone scene;

[1.7] receiving a second request to create a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the third zone player is different than the second zone player;

[1.8] based on the second request, i) causing creation of the second zone scene, ii) causing an indication of the second zone scene to be transmitted to the first zone player, and iii) causing storage of the second zone scene;

[1.9] displaying a representation of the first zone scene and a representation of the second zone scene; and

[1.10] while displaying the representation of the first zone scene and the representation of the second zone scene, receiving a third request to invoke the first zone scene; and

[1.11] based on the third request, causing the first zone player to transition from operating in the standalone mode to operating in accordance with the first predefined grouping of zone players such that the first zone player is configured to coordinate with at least the second zone player to output media in synchrony with output of media by at least the second zone player.

'885 Patent, Claim 1 vs. ALL Google Combinations

[1.0] A first zone player comprising:

[1.1] a network interface that is configured to communicatively couple the first zone player to at least one data network;

[1.2] one or more processors;

[1.3] a non-transitory computer-readable medium; and

[1.4] program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the first zone player to perform functions comprising:

[1.5] while operating in a standalone mode in which the first zone player is configured to play back media individually in a networked media playback system comprising the first zone player and at least two other zone players:

[1.6] (i) receiving, from a network device over a data network, a first indication that the first zone player has been added to a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked; and

[1.7] (ii) receiving, from the network device over the data network, a second indication that the first zone player has been added to a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the second zone player is different than the third zone player;

[1.8] after receiving the first and second indications, continuing to operate in the standalone mode until a given one of the first and second zone scenes has been selected for invocation;

[1.9] after the given one of the first and second zone scenes has been selected for invocation, receiving, from the network device over the data network, an instruction to operate in accordance with a given one of the first and second zone scenes respectively comprising a given one of the first and second predefined groupings of zone players; and

[1.10] based on the instruction, transitioning from operating in the standalone mode to operating in accordance with the given one of the first and second predefined groupings of zone players such that the first zone player is configured to coordinate with at least one other zone player in the given one of the first and second predefined groupings of zone players over a data network in order to output media in synchrony with output of media by the at least one other zone player in the given one of the first and second predefined groupings of zone players.

'966 Patent, Claim 1 vs. ALL Google Combinations

[1.0] A computing device comprising:

[1.1] one or more processors;

[1.2] a non-transitory computer-readable medium; and

[1.3] program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the computing device to perform functions comprising:

[1.4] while serving as a controller for a networked media playback system comprising a first zone player and at least two other zone players, wherein the first zone player is operating in a standalone mode in which the first zone player is configured to play back media individually:

[1.5] receiving a first request to create a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked;

[1.6] based on the first request, i) causing creation of the first zone scene, ii) causing an indication of the first zone scene to be transmitted to the first zone player, and iii) causing storage of the first zone scene;

[1.7] receiving a second request to create a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the third zone player is different than the second zone player;

[1.8] based on the second request, i) causing creation of the second zone scene, ii) causing an indication of the second zone scene to be transmitted to the first zone player, and iii) causing storage of the second zone scene;

[1.9] displaying a representation of the first zone scene and a representation of the second zone scene; and

[1.10] while displaying the representation of the first zone scene and the representation of the second zone scene, receiving a third request to invoke the first zone scene; and

[1.11] based on the third request, causing the first zone player to transition from operating in the standalone mode to operating in accordance with the first predefined grouping of zone players such that the first zone player is configured to coordinate with at least the second zone player to output media in synchrony with output of media by at least the second zone player.

'966 Patent, Dependents vs. ALL Google Combinations

[2.0] The computing device of claim 1, further comprising program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the computing device to perform functions comprising: X

[2.1] while the first zone player is configured to coordinate with at least the second zone player to play back media in synchrony with at least the second zone player, receiving a fourth request to invoke the second zone scene; and X

[2.2] based on the fourth request, causing the first zone player to (a) cease to operate in accordance with the first predefined grouping of zone players such that the first zone player is no longer configured to coordinate with at least the second zone player to output media in synchrony with output of media by at least the second zone player and (b) begin to operate in accordance with the second predefined grouping of zone players such that the first zone player is configured to coordinate with at least the third zone player to output media in synchrony with output of media by at least the third zone player. X

[3.0] The computing device of claim 1, X

[3.1] wherein causing storage of the first zone scene comprises causing storage of the first zone scene at a location other than the computing device, and X

[3.2] wherein causing storage of the second zone scene comprises causing storage of the second zone scene at the location other than the computing device. X

[4.0] The computing device of claim 3, X

[4.1] wherein the location other than the computing device comprises a zone player of the first predefined grouping of zone players. X

'966 Patent, Dependents vs. ALL Google Combinations

[6.0] The computing device of claim 1,	X
[6.1] wherein the first predefined grouping of zone players does not include the third zone player, and	X
[6.2] wherein the second predefined grouping of zone players does not include the second zone player.	X

[8.0] The computing device of claim 1,	X
[8.1] wherein receiving the first request comprises receiving a first set of one or more inputs via a user interface of the computing device,	X
[8.2] wherein receiving the second request comprises receiving a second set of one or more inputs via the user interface, and	X
[8.3] wherein receiving the third request comprises receiving a third set of one or more inputs via the user interface.	X

Additional Obviousness Considerations

Safeguards Against Hindsight Bias

- Must have a motivation to combine to achieve the claimed invention
- Must have a reasonable expectation of success
- Must consider secondary considerations

Sonos Forums

Majik 15 years ago

April 18, 2006

Agreed.

The ease of lining/unlinking zones is also dependent on the number of zones you have. 2 or 3 zones isn't too much of an imposition, but I imagine 6 or more is quite painful.

Just imagine if you had the full 32 zones!

At the moment we have a single, pre-defined group, that being "All Zones". I would like to see this as the default, but with the ability to configure your own groups and to delete the "All zones" group (some may not want this).

This would help with people who are having trouble blasting their neighbours during 2am parties by accidentally selecting hottub/garden.

Now this brings an interesting question: should zones be allowed to be in more than one group? If this is allowed, are there any unwanted side-effects with this?

Personally I would be happy with a grouping that allowed zones to be in at most one group (and this might be the easiest to implement), but others may not.

Also, if zone groups were allowed, what "display options" would be useful for the Zones display. Off the top of my head I can see uses for:

* Hide all zones (only show groups)
* Sorting (by name or groups before zones)

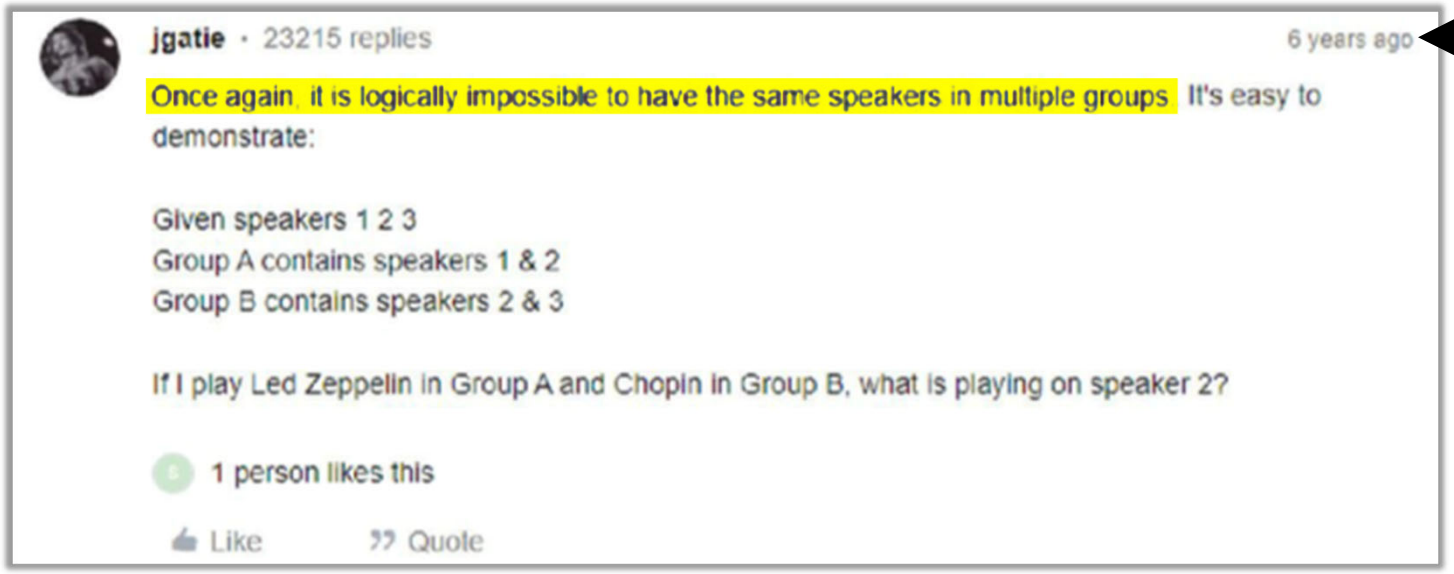
These could be either by a user preference or by a toggle button on the zone screen.

Also, how would these be displayed on the other screens (e.g. now playing)... as groups or as individual zones? I suspect individual zones would be better, as this takes into account all circumstances of use.

Cheers,

Keith

Sonos Forums



jgatie · 23215 replies 6 years ago

Once again, it is logically impossible to have the same speakers in multiple groups. It's easy to demonstrate:

Given speakers 1 2 3
Group A contains speakers 1 & 2
Group B contains speakers 2 & 3

If I play Led Zeppelin in Group A and Chopin in Group B, what is playing on speaker 2?

1 person likes this

Like Quote

Jan. 8, 2016

jgatie · 23215 replies 6 years ago

> ***The Mekon wrote:***
> *Well that's easy - either just play on the speaker the most recent group selected, or throw an error when you try to play a group when that speaker is already in a different group that is playing. It doesn't really matter - it's not a situation that most people would configure, and so long as whatever method is consistent, who cares?*

As a software developer, I care. I support creating permanent groups. I do not support the illogical concept of a speaker belonging to more than one group. It's stupid.

1 person likes this

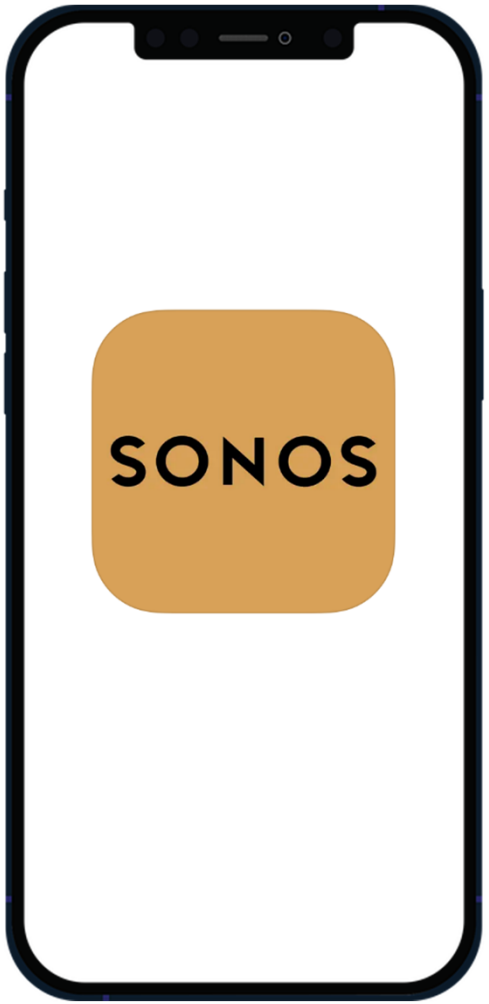
Like Quote

Jan. 8, 2016

Safeguards Against Hindsight Bias

- Must have a motivation to combine to achieve the claimed invention
- Must have a reasonable expectation of success
- Must consider secondary considerations

Sonos's Current "Zone Scene" Grouping



SONOS

Praise of Sonos's "Zone Scene" Inventions

080 - Migrating your Sonos system you the new S2 app is messy. Here's... moz-extension://0648b267-c4c5-4d22-8b6b-bef93dec7476/fsCaptured.html

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CNN Underscored is your guide to the everyday products and services that help you live a smarter, simpler and more fulfilling life. The content is created by CNN Underscored. CNN News staff is not involved. When you make a purchase, we receive revenue.

Migrating your Sonos system to the new S2 app can be messy. Here's what we know

By Jacob Krol
Published 12:37 PM EDT, Mon June 8, 2020

More from CNN Underscored ©utbrain

"By far the best feature of Sonos S2 is the ability to save a group of speakers as a preset. No longer will you need to constantly select which speaker you want to listen to each time. Save it as a group, and you're better off. It's really great…."

CNN

as you don't have any S1 products, the migration will be easy enough. Sonos says all you need to do is delete the current app from your device and download the new Sonos app. It has a tan color instead of the classic black that Sonos is known for.

The complication arises if you currently have a system that uses both S1 and S2 products. You can't move that system over to S2 without splitting it — essentially keeping the S1 products on S1 and moving the rest to

1 of 4 2/14/22, 10:02 AM
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at SONOS-SVG2-00062361

Praise of Sonos's "Zone Scene" Inventions

"[A] new feature called 'room groups,' … could be very useful … and will also remember frequently grouped speakers, such as 'Upstairs; 'Downstairs,' 'Front of House,' and 'Back of House,' so you don't need to repeatedly create those scenarios."

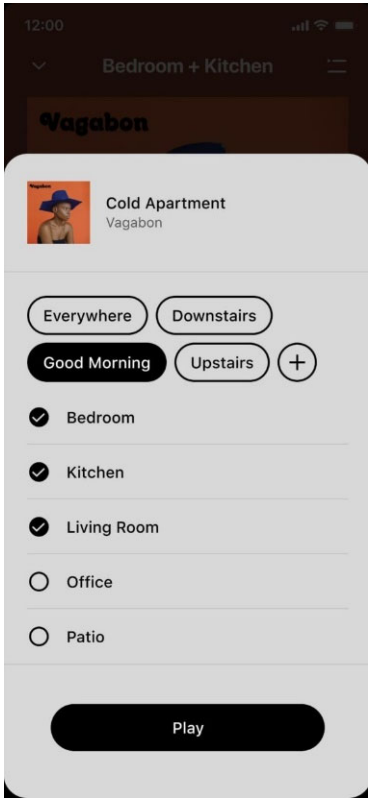
TechHive

at SONOS-SVG2-00062444

Praise of Sonos's "Zone Scene" Inventions

"Perhaps the most beneficial announced feature of the new platform, Room Groups promises to make our Sonos systems a little smarter about keeping certain sets of speakers linked.… Imagine having 'main floor' or 'upstairs' groups so you didn't have to set these each-and-every time, and you start to grok the convenience benefit here."

the Mac Observer



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NORTHERN DISTRICT OF CALIFORNIA
TX6787
3:20-cv-06754-WHA

at SONOS-SVG2-00062434

Praise of Sonos's "Zone Scene" Inventions

"You can even link speakers together into pre-set groups to set up a multi-room experience much quicker, which is handy if you have lots of speakers."

MobileSyrup

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NORTHERN DISTRICT OF CALIFORNIA
TX6789
3:20-cv-06754-WHA

at SONOS-SVG2-00062449

Validity – Conclusion

Asserted Claims	Prior Art	Valid?
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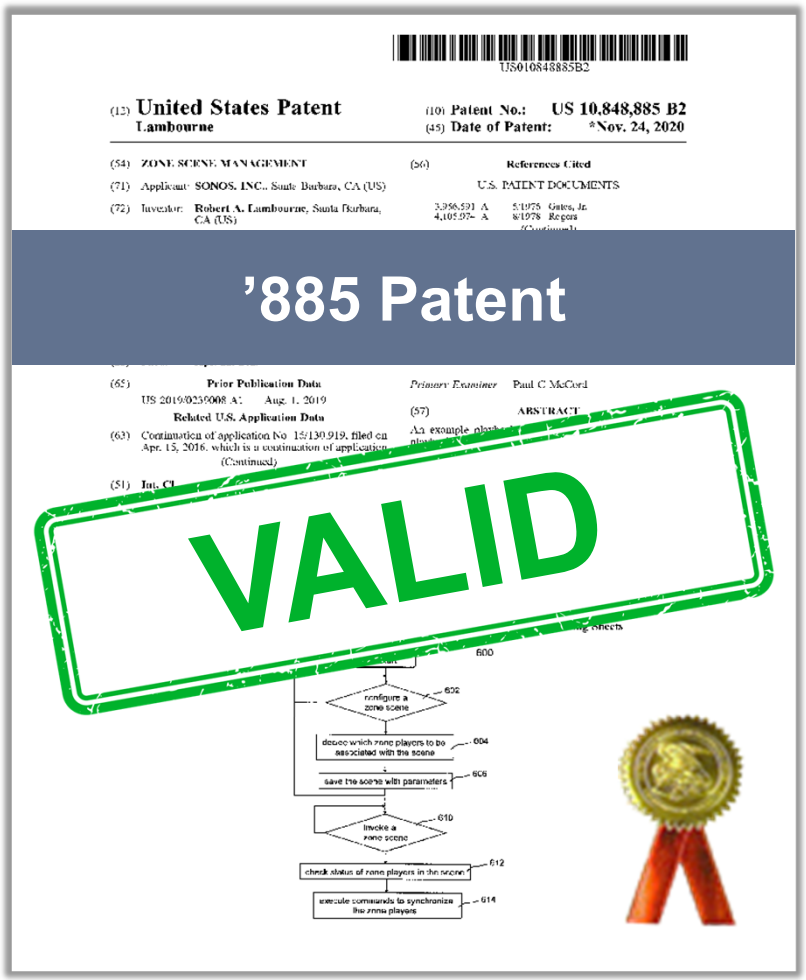
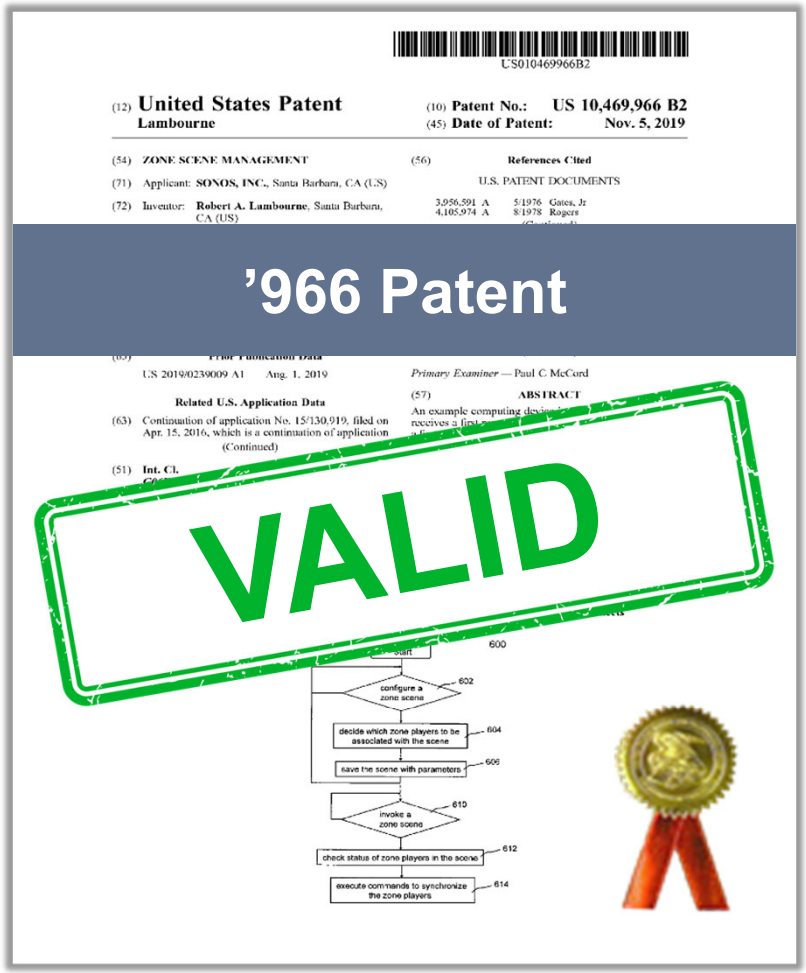
’966 Patent Claims 1, 2, 4, 6, 8	 Sonos 2005 System + Secondary Prior Art	✓

Validity – Conclusion





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